

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)
Takashi DAIMARU et al.) Atty. Docket No.: **HOYA 0020**
Serial No.)
Filed: Herewith)
For: METHOD FOR PROCESSING A)
SPECTACLE LENS, LENS METER,)
AND APPARATUS FOR PROCESS-)
ING A SPECTACLE LENS, HAVING)
LENS METER AND DATA OF)
RELATIVE POSITIONS FOR PRO-) Date: December 10, 2001
CESSING A SPECTACLE LENS)

PRELIMINARY AMENDMENT (A)

BOX: PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D. C. 20231

Sir:

Kindly amend the above-captioned application as follows:

IN THE CLAIMS:

Kindly amend the claims to read as follows:

1. (Unchanged) A method for processing a spectacle lens, comprising:
measuring a lens and processing the lens,
wherein the measuring step comprises collecting optical information including

calculating a calculated position of an optical reference point by using a lens meter for measuring optical properties of the lens, the optical properties including a prism value, and the processing step comprises using the optical information collected in the measuring step as a portion of data for effecting lens processing,

wherein the measuring step further comprises:

measuring the optical properties, including the prism value, of the lens to generate measured data by measuring the optical properties at a point selected on the lens, wherein the selected point is a point of measurement;

calculating a calculated optical reference point position, including a calculated position of an optical center, on the lens using the measured data generated by measuring;

marking the lens by placing a mark on the lens at the point of measurement or at a point located at a position relative to the point of measurement, and generating mark data representing the position of the mark;

processing the mark data representing the position of the mark to determine a relative relationship between the position of the mark and the calculated position of the optical reference point, thereby generating first data representing the relationship between the position of the mark and the calculated position of the optical reference point; and

saving the first data to a memory medium, or recording the first data to a recording medium, or transmitting the first data to a lens processing apparatus, so that the first data is subsequently available for effecting the lens processing.

2. (Unchanged) A method for processing a spectacle lens as claimed in claim 1, wherein the first data is saved to a memory medium or recorded to a recording medium.

3. (Unchanged) A method for processing a spectacle lens as claimed in claim 2, wherein the step of processing the mark data further comprises:

detecting the mark on the lens and measuring the position of the mark;

reading the first data from the memory medium when the first data is stored in the memory medium, or reading the first data from the recording medium when the first data is stored on a recording medium;

specifying a specified position of an optical reference point, including a specified position of the optical center, on the lens, wherein the specified position of the optical reference point is determined using the mark data and the first data; and

processing the lens further comprises attaching a lens holder to a position on the lens prior to cut processing, wherein the specified position of the optical reference point is used as the position for attaching the lens holder to the lens.

4. (Unchanged) A method for processing a spectacle lens comprising the steps of:

(a) supplying an uncut lens and setting the lens in a lens meter, wherein the lens meter has a first information processing portion;

(b) measuring optical properties of the lens at a point of measurement on the lens to generate measured data, wherein the optical properties include a prism value;

(c) calculating a calculated optical reference point position, including a calculated position of an optical center, on the lens using the measured data, wherein the calculated optical reference point position is calculated by the first information processing portion;

(d) marking the lens with a mark placed at a position on the lens at the point of measurement or at a point relative to the point of measurement, and generating first mark data representing the position of the mark;

(e) processing the first mark data to determine a relative relationship between the position of the mark and the calculated position of the optical reference point, thereby generating third data representing the relationship between the position of the mark and the calculated position of the optical reference point;

(f) saving the third data to a memory medium, or recording the third data to a recording medium, or transmitting the third data from the lens meter to a lens processing apparatus, so that the first data is subsequently available for affecting lens processing;

(g) removing the lens from the lens meter and setting the lens on a processing table of a lens processing apparatus where blocking is performed, the lens processing apparatus comprising a second information processing portion;

(h) detecting the mark on the lens and measuring the position of the detected mark to generate second mark data, wherein the second mark data represents the position of the mark as measured;

(i) reading the third data from the memory when saved or from the recording medium when recorded, or receiving the third data from the lens meter, wherein the second

information portion reads the third data;

(j) specifying a specified position of an optical reference point, including a specified position of the optical center, on the lens wherein the specified position of the optical reference point is determined using the measured mark data and the third data;

(k) blocking a lens holder to the lens at a position of attachment on the lens, where the position of attachment corresponds to the specified position of the optical reference point; and

(l) subsequently cut processing the uncut lens while blocked to the lens holder to produce a spectacle lens.

5. (Unchanged) A lens meter comprising:

a first measuring portion for measuring optical properties of a lens, wherein the first portion measures the optical properties, including a prism value, at a selected point of measurement on a lens to be measured and operates to transmit data representing the measured optical properties and data representing the position of the point of measurement;

a second marking portion for marking the lens, wherein the second portion is disposed in proximity to the first portion and operates to place a mark at the point of measurement or at a point relative to the point of measurement on the lens and operates to transmit data representing the position of the mark; and

a third information processing portion for information processing, wherein the third portion is operationally connected to the first portion and the second portion and operates to receive the data representing the measured optical properties and the data representing the

position of the point of measurement from the first portion and to receive data representing the position of the mark from the second portion, the third portion further operates to calculate a calculated position of an optical reference point, including a calculated position of an optical center, on the measured lens in response to receiving data representing the measured optical properties from the first portion, to generate data representing a relationship between the position of the mark and the calculated position of the optical reference point in response to receiving data representing the position of the mark transmitted from the second portion, and subsequent to calculating the calculated position of the optical reference point, the third portion operates to transmit data representing the relationship between the position of the mark and the calculated position of the optical reference point to a memory medium, a recording medium, or to a lens processing apparatus for lens processing that is operationally connected to the third portion.

6. (Amended) An apparatus for processing a spectacle lens comprising a lens meter according to claim 5.

7. (Amended) An apparatus for processing a spectacle lens, the apparatus comprising a lens meter having an information-processing portion, the information processing portion comprising:

a circuit for signal processing, where the circuit for signal processing receives a first signal from an optical system for measurement and a second signal from a lens marking portion, wherein the first signal corresponds to data measured by the optical system and the second signal corresponds to data generated by the lens marking portion;

a circuit for numerical calculation, wherein the circuit for numerical calculation calculates a

calculated optical reference point position, including a calculated position of an optical center in response to receiving the first signal from the optical system for measurement, and the circuit for numerical calculation processes the calculated position of the optical center and the second signal from the lens marking portion to determine a relationship between the calculated position of the optical center and the second signal, thereby generating output data representing the relationship between the calculated position of the optical center and the second signal; and

a data storage medium for storing the output data until the output data is outputted to a lens processing apparatus in communication with the information processing portion of the lens meter.

REMARKS

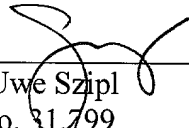
With the above amendments, claims "5" (second) and "6" have been correctly renumbered as claims --6-- and --7--, respectively. Additionally, correctly renumbered claim 6 has been amend to depend from claim 5.

A marked-up version showing the amendments made is attached for the convenience of the Examiner.

Questions are welcomed by the below-signed attorney for applicants.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CLAIM CHANGES MADE

1. A method for processing a spectacle lens, comprising:

measuring a lens and processing the lens,

wherein the measuring step comprises collecting optical information including calculating a calculated position of an optical reference point by using a lens meter for measuring optical properties of the lens, the optical properties including a prism value, and the processing step comprises using the optical information collected in the measuring step as a portion of data for effecting lens processing,

wherein the measuring step further comprises:

measuring the optical properties, including the prism value, of the lens to generate measured data by measuring the optical properties at a point selected on the lens, wherein the selected point is a point of measurement;

calculating a calculated optical reference point position, including a calculated position of an optical center, on the lens using the measured data generated by measuring;

marking the lens by placing a mark on the lens at the point of measurement or at a point located at a position relative to the point of measurement, and generating mark data representing the position of the mark;

processing the mark data representing the position of the mark to determine a relative relationship between the position of the mark and the calculated position of the optical reference point, thereby generating first data representing the relationship between the position of the mark and the calculated position of the optical reference point; and

saving the first data to a memory medium, or recording the first data to a recording medium, or transmitting the first data to a lens processing apparatus, so that the first

data is subsequently available for effecting the lens processing.

2. A method for processing a spectacle lens as claimed in claim 1, wherein the first data is saved to a memory medium or recorded to a recording medium.

3. A method for processing a spectacle lens as claimed in claim 2, wherein the step of processing the mark data further comprises:

detecting the mark on the lens and measuring the position of the mark;

reading the first data from the memory medium when the first data is stored in the memory medium, or reading the first data from the recording medium when the first data is stored on a recording medium;

specifying a specified position of an optical reference point, including a specified position of the optical center, on the lens, wherein the specified position of the optical reference point is determined using the mark data and the first data; and

processing the lens further comprises attaching a lens holder to a position on the lens prior to cut processing, wherein the specified position of the optical reference point is used as the position for attaching the lens holder to the lens.

4. A method for processing a spectacle lens comprising the steps of:

(a) supplying an uncut lens and setting the lens in a lens meter, wherein the lens meter has a first information processing portion;

(b) measuring optical properties of the lens at a point of measurement on the lens to

generate measured data, wherein the optical properties include a prism value;

(c) calculating a calculated optical reference point position, including a calculated position of an optical center, on the lens using the measured data, wherein the calculated optical reference point position is calculated by the first information processing portion;

(d) marking the lens with a mark placed at a position on the lens at the point of measurement or at a point relative to the point of measurement, and generating first mark data representing the position of the mark;

(e) processing the first mark data to determine a relative relationship between the position of the mark and the calculated position of the optical reference point, thereby generating third data representing the relationship between the position of the mark and the calculated position of the optical reference point;

(f) saving the third data to a memory medium, or recording the third data to a recording medium, or transmitting the third data from the lens meter to a lens processing apparatus, so that the first data is subsequently available for affecting lens processing;

(g) removing the lens from the lens meter and setting the lens on a processing table of a lens processing apparatus where blocking is performed, the lens processing apparatus comprising a second information processing portion;

(h) detecting the mark on the lens and measuring the position of the detected mark to

generate second mark data, wherein the second mark data represents the position of the mark as measured;

(i) reading the third data from the memory when saved or from the recording medium when recorded, or receiving the third data from the lens meter, wherein the second information portion reads the third data;

(j) specifying a specified position of an optical reference point, including a specified position of the optical center, on the lens wherein the specified position of the optical reference point is determined using the measured mark data and the third data;

(k) blocking a lens holder to the lens at a position of attachment on the lens, where the position of attachment corresponds to the specified position of the optical reference point; and

(l) subsequently cut processing the uncut lens while blocked to the lens holder to produce a spectacle lens.

5. A lens meter comprising:

a first measuring portion for measuring optical properties of a lens, wherein the first portion measures the optical properties, including a prism value, at a selected point of measurement on a lens to be measured and operates to transmit data representing the measured optical properties and data representing the position of the point of measurement;

a second marking portion for marking the lens, wherein the second portion is disposed in proximity to the first portion and operates to place a mark at the point of measurement or

at a point relative to the point of measurement on the lens and operates to transmit data representing the position of the mark; and

a third information processing portion for information processing, wherein the third portion is operationally connected to the first portion and the second portion and operates to receive the data representing the measured optical properties and the data representing the position of the point of measurement from the first portion and to receive data representing the position of the mark from the second portion, the third portion further operates to calculate a calculated position of an optical reference point, including a calculated position of an optical center, on the measured lens in response to receiving data representing the measured optical properties from the first portion, to generate data representing a relationship between the position of the mark and the calculated position of the optical reference point in response to receiving data representing the position of the mark transmitted from the second portion, and subsequent to calculating the calculated position of the optical reference point, the third portion operates to transmit data representing the relationship between the position of the mark and the calculated position of the optical reference point to a memory medium, a recording medium, or to a lens processing apparatus for lens processing that is operationally connected to the third portion.

56. An apparatus for processing a spectacle lens comprising a lens meter according to claim 45.

67. An apparatus for processing a spectacle lens, the apparatus comprising a lens meter having an information-processing portion, the information processing portion comprising:

a circuit for signal processing, where the circuit for signal processing receives a first

signal from an optical system for measurement and a second signal from a lens marking portion, wherein the first signal corresponds to data measured by the optical system and the second signal corresponds to data generated by the lens marking portion;

a circuit for numerical calculation, wherein the circuit for numerical calculation calculates a calculated optical reference point position, including a calculated position of an optical center in response to receiving the first signal from the optical system for measurement, and the circuit for numerical calculation processes the calculated position of the optical center and the second signal from the lens marking portion to determine a relationship between the calculated position of the optical center and the second signal, thereby generating output data representing the relationship between the calculated position of the optical center and the second signal; and

a data storage medium for storing the output data until the output data is outputted to a lens processing apparatus in communication with the information processing portion of the lens meter.